



(19)

Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 1 080 641 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
30.05.2001 Bulletin 2001/22

(51) Int. Cl.⁷: A01N 59/00, A01N 43/90,
A01N 43/80, A01N 57/34,
A01N 33/24.
// (A01N59/00, 57:34, 43:90,
43:80, 33:24)

(43) Date of publication A2:
07.03.2001 Bulletin 2001/10

(21) Application number: 00117445.7

(22) Date of filing: 11.08.2000

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: 12.08.1999 US 373288

(71) Applicant:
NALCO CHEMICAL COMPANY
Naperville Illinois 60563-1198 (US)

(72) Inventors:
• Cooper, Andrew J.
Oswego, IL 60543 (US)

- Dallmier, Anthony W.
Aurora, IL 60504 (US)
- Kelly, Robert F.
Oswego, IL 60543 (US)
- McCoy, William F.
Naperville, IL 60540 (US)
- Ma, Xi
Oswego, IL 60543 (US)

(74) Representative:
Ebner von Eschenbach, Jennifer et al
c/o Ladas & Parry,
Dachauerstrasse 37
80335 München (DE)

(54) **Composition and method for controlling biological growth using stabilized sodium hypobromite in synergistic combinations**

(57) A synergistic composition and method for controlling biological growth in industrial fluids are disclosed, wherein the composition comprises stabilized sodium hypobromite and at least one compound selected from the group consisting of coco alkyltrimethylammonium oxide, n-coco alkyltrimethylenediamine, tetraalkyl phosphonium chloride, 7-oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid and 4,5-dichloro-2-n-octyl-4-isothiazoline-3-one.



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 11 7445

DOCUMENTS CONSIDERED TO BE RELEVANT					
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.)		
X	EP 0 913 091 A (NALCO CHEMICAL CO) 6 May 1999 (1999-05-06) * paragraphs '0018!, '0019!, '0025!-'0028!; claims 15,16 *	1-15	A01N59/00 A01N43/90 A01N43/80 A01N57/34 A01N33/24		
X	EP 0 471 481 A (BETZ EUROPE, INC) 19 February 1992 (1992-02-19)	1-10,12, 13	//(A01N59/00, 57:34,43:90,		
Y	* page 2, line 1-21 * * page 3, line 3-21; tables V-VI *	11,15	43:80,33:24)		
X	WO 96 14092 A (GRACE W R & CO) 17 May 1996 (1996-05-17)	1-10,12, 13			
Y	* page 3, line 21 - page 4, line 8 * * page 5, line 3 - page 6, line 9 *	11,15			
Y	US 5 468 739 A (WHITEKETTLE WILSON K ET AL) 21 November 1995 (1995-11-21) * column 3, line 52 - column 4, line 65 *	11			
Y	EP 0 479 405 A (NALCO CHEMICAL CO) 8 April 1992 (1992-04-08) * the whole document *	11,15	TECHNICAL FIELDS SEARCHED (Int.Cl.)		
A	WO 99 06320 A (NALCO CHEMICAL CO) 11 February 1999 (1999-02-11) * page 7, line 1-20 * * page 11, paragraph 3 - page 13, paragraph 1 * * page 18, paragraph 3 - page 19, paragraph 2 *	1-15	A01N		
The present search report has been drawn up for all claims					
Place of search	Date of completion of the search	Examiner			
MUNICH	5 April 2001	Klaver, J			
CATEGORY OF CITED DOCUMENTS					
X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document					
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document					

European Patent
Office

Application Number

EP 00 11 7445

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):

- No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

- None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



European Patent
Office

LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 00 11 7445

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1 – 13 (all partial)

Synergistic compositions of stabilized sodium hypobromite and a compound selected from cocoalkyl dimethylamine oxide and N-cocoalkyl trimethylene diamine and methods of using these compositions.

2. Claims: 1 – 13 (all partial)

Synergistic composition of stabilized sodium hypobromite and tetra alkyl phosphonium chloride and methods of using this composition.

3. Claims: 1 – 13 (all partial)

Synergistic composition of stabilized sodium hypobromite and 7-oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid and methods of using this composition.

4. Claims: 1 – 13 (all partial)

Synergistic composition of stabilized sodium hypobromite and 4,5-dichloro-2-n-octyl-4-isothiazoline-3-one and methods of using this composition.

5. Claims: 14,15

Synergistic combinations of stabilized hypobromite and a second biocide as defined by claim 14 and a method of controlling macrobiological growth as defined by claim 15.

The application lacks unity within the meaning of Article 82 EPC for the following reasons:

The common concept linking together the compositions as defined by present claims 1 and 14 is the synergistic effect between the stabilized sodium hypobromite on the one hand and the second biocidal ingredient on the other. However, synergistic compositions for controlling biological growth in industrial aqueous systems comprising stabilized sodium hypobromite are known from EP 913 091 A1 (= D1). This document discloses such combinations in which the second biocidal agent is either a mixture of 5-C1-2-Me-4-isothiazolin-3-one and 2-Me-4-isothiazolin-3-one or one of the compounds mentioned in claim 14 of the present application (see D1, page 4, paragraphs 0025-0028 and claims 14 and 16).

The second biocidal ingredients of the various synergistic combinations of the application differ structurally substantially. The various embodiments of the present application (inventions number 1 – 5) hence are not linked by a novel common general inventive concept, contrary to the requirements of Art. 82 EPC.

Since the search could be completed without additional work, the applicant was not invited to pay additional search fees (Guidelines B



European Patent
Office

LACK OF UNITY OF INVENTION
SHEET B

Application Number

EP 00 11 7445

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

VII 2.3).

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 11 7445

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

05-04-2001

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
EP 0913091	A	06-05-1999	US	5922745 A	13-07-1999
			AU	9046898 A	20-05-1999
			BR	9804352 A	08-03-2000
			JP	11255610 A	21-09-1999
			ZA	9809875 A	05-05-1999
EP 0471481	A	19-02-1992	US	5063212 A	05-11-1991
			US	5063213 A	05-11-1991
			US	5063215 A	05-11-1991
			US	5063218 A	05-11-1991
			US	5063216 A	05-11-1991
			US	5063211 A	05-11-1991
			US	5063214 A	05-11-1991
			US	5063217 A	05-11-1991
			US	5010066 A	23-04-1991
			AT	147939 T	15-02-1997
			AT	175310 T	15-01-1999
			CA	2048935 A	14-02-1992
			DE	69124313 D	06-03-1997
			DE	69124313 T	19-06-1997
			DE	69130743 D	18-02-1999
			DE	69130743 T	27-05-1999
			EP	0743002 A	20-11-1996
			ES	2095917 T	01-03-1997
			ES	2126359 T	16-03-1999
			FI	913836 A	14-02-1992
			PT	98649 A, B	30-06-1992
WO 9614092	A	17-05-1996	AU	696309 B	03-09-1998
			AU	4014795 A	31-05-1996
			BR	9509598 A	06-01-1998
			CA	2204279 A	17-05-1996
			CZ	9701354 A	13-08-1997
			EP	0789595 A	20-08-1997
			FI	971852 A	30-04-1997
			JP	10509141 T	08-09-1998
			NO	972002 A	02-07-1997
			NZ	296363 A	29-04-1999
US 5468739	A	21-11-1995	CA	2156443 A	01-05-1996
EP 0479405	A	08-04-1992	US	5141754 A	25-08-1992
			AT	116271 T	15-01-1995
			AU	639315 B	22-07-1993
			AU	7536591 A	02-04-1992
			CA	2038003 A	02-04-1992

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 11 7445

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

05-04-2001

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
EP 0479405 A		DE	69106303 D	09-02-1995
		DE	69106303 T	20-07-1995
		JP	6063569 A	08-03-1994
		US	5209934 A	11-05-1993
WO 9906320 A	11-02-1999	US	5942126 A	24-08-1999
		AU	8506098 A	22-02-1999
		BR	9806044 A	08-09-1999
		CN	1273560 T	15-11-2000
		EP	0929500 A	21-07-1999
		JP	2001501869 T	13-02-2001
		NO	990679 A	01-06-1999
		US	6136205 A	24-10-2000
		ZA	9806669 A	04-02-1999

THIS PAGE BLANK (USPTO)